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Problems of Arctic Geology;' Prof. W. Boyd Dawkins, three lectures on 'The Relation of Geology to History;' Mr. Walter Frewen Lord, three lectures on 'The Growth of the Mediterranean Route to the East,' and Lord Rayleigh, six lectures on 'Electricity and Electrical Vibrations.' The Friday evening meetings will begin on January 22d, when a lecture will be given by Prof. Dewar.

ACCORDING to a note in *Natural Science* the report of the trustees of the Australian Museum, Sydney, is chiefly remarkable for the record of 2,231 mollusca added to the collections in 1895. Among the donors, the chief was Mr. W. A. Horn. A large collection of fossil Bryozoa was presented by Mr. R. Etheridge, jr. The usual want of funds has prevented the trustees from acquiring many specimens of great value, and this same want has seriously stopped collecting work, from which alone one can acquire duplicates to exchange with other institutions. One of the most important acquisitions during the year was one of Captain Cook's original MS. journals, the Log of the 'Endeavor,' presented by Mr. F. H. Danger. A curious and unfortunate event was the destruction of the entire roof over the central part of the main building by white ants. This had to be shored up immediately on discovery, and the erection of a new roof will at once be proceeded with.

In a recent issue *Nature* gives a detailed account of the report of the royal commission on vaccination. As to the effect of vaccination in reducing the prevalence of, and mortality from, small-pox, they conclude: (1) that it diminishes the liability to be attacked by the disease; (2) that it modifies the character of the disease, and renders it (*a*) less fatal, and (*b*) of a milder or less severe type; (3) that the protection it affords against attacks of the disease is greatest during the years immediately succeeding the operation of vaccination. It is impossible to fix with precision the length of this period of highest protection. Though not in all cases the same, if a period is to be fixed, it might, we think, fairly be said to cover in general a period of nine or ten years; (4) that after the lapse of the period of highest protec-

tive potency the efficacy of vaccination to protect against attack rapidly diminishes, but that it is still considerable in the next quinquennium, and probably never altogether ceases; (5) that its power to modify the character of the disease is also greatest in the period in which its power to protect from attack is greatest, but that its power thus to modify the disease does not diminish as rapidly as its protective influence against attacks, and its efficacy during the later periods of life to modify the disease is still very considerable; (6) that re-vaccination restores the protection which lapse of time has diminished, but the evidence shows that this protection again diminishes, and that, to ensure the highest degree of protection which vaccination can give, the operation should be at intervals repeated; (7) that the beneficial effects of vaccination are most experienced by those in whose case it has been most thorough. We think it may fairly be concluded that where the vaccine matter is inserted in three or four places it is more effectual than when introduced into one or two places only, and that if the vaccination marks are of an area of half a square inch they indicate a better state of protection than if their area be at all considerably below this."

#### UNIVERSITY AND EDUCATIONAL NEWS.

DR. E. N. POTTER has resigned from the presidency of Hobart College.

DR. W. E. CASTLE has been appointed instructor in biology in Knox College, Galesburg, Ill.

DR. F. B. PECK has been made associate professor of geology and paleontology at Lafayette College.

DR. G. A. TAWNEY, assistant in Princeton University, has been appointed to the chair of philosophy in Beloit College, vacant by the death of Prof. Blaisdell.

AT Cornell University an Oliver Graduate Scholarship in Mathematics, of the annual value of \$300, has been founded in memory of James Edward Oliver.

THE number of students registered in the College of Physicians and Surgeons, Columbia University, up to November 1st, were 625, of whom there are in the first

year 279, in the second year 158 and in the third year 147. There will be no regular class graduated this year, it being the first in which the four years course has taken effect. The temporary decrease due to the lengthening of the course has this year been made up, and next year with the four classes the attendance will be very large.

THE Cornell University Register for 1896-7 has already been issued; it shows a registration of 1763 compared with 1684 at the same time last year, this being the largest registration hitherto recorded. The faculty also shows an increase, the total number of instructors now being 175. The Library records a gain of 12,890 books and 1200 pamphlets since last year.

AT Cambridge University Dr. L. E. Shore, of St John's College, has been appointed a university lecturer, and Mr. Eichholz, of Emmanuel College, an additional demonstrator in physiology.

MISS KNIGHT, M. B. Lond., has been appointed professor of anatomy and pathology to the Lhudiana Medical School, North West Provinces, India.

THE eighth University Extension Summer Meeting will be held at Oxford, July 31-August 25, 1897.

#### DISCUSSION AND CORRESPONDENCE.

##### THE JURA IN THE UNITED STATES.

'THE Jurassic formation on the Atlantic Coast' (SCIENCE, Dec. 1, pp. 805-816) is the most important paper on practical geology and classification published yet by Prof. O. C. Marsh. The conclusions arrived at are excellent, and the proofs given, although necessarily summary, are sufficient to warrant the exactness of the classification of the Potomac formation as belonging to the Upper Jura.

A few remarks on the history as well as on the geologic chronology may be acceptable, for, without detracting anything from the merit and great value of the memoir of Prof. Marsh, some points can be rendered more clear and easily understood, at the same time more exact.

We read: "Until a comparatively modern date, this supposed absence of Jurassic deposits was thought to be true, also, for the rest of this

country. I well remember the parting advice given me by an eminent professor of geology, with whom I studied in Germany (Ferdinand Romer), 'The first thing you should do on your return to America is: look for the Jurassic formation. I am sure it is there; full of fossils.'" (SCIENCE, p. 805.) The choice of Ferdinand Romer as an adviser on the Jurassic formation in America is unfortunate, for Prof. F. Romer, during his stay in Texas, remained several months at Fredericburg, which lay on the Jurassic formation; besides he explored, in some detail, the valley of the Trinity River, where the Jura exists also, and not only did he not recognize the Jurassic formation in Texas, but by a wrong determination of a *Gryphoa*, which he identified with the *Gryphea Pitcheri*, he helped greatly the confusion created a few years later by a paleontologist who denied the existence of the Jurassic deposits of New Mexico, near the Texas line, made in 1853, by the geologist of the Pacific Railroad exploration by the thirty-fifth parallel of latitude, commanded by Lieutenant A. W. Whipple. As Prof. Marsh says, "Ferdinand Romer added much to our knowledge of the geology and paleontology of this country," for he published the first essay of a geological map of Texas in 1849, and three volumes of paleontology on Texas and Tennessee in 1852, 1860 and 1889; but at the same time it is important to notice that he did not recognize in Texas the Permian, the Trias nor the Jura; and as to the Cretaceous he failed to recognize the Lower Cretaceous, or Neocomian, going so far in his erroneous determination of age of strata as to place the Lower Cretaceous above the Upper Cretaceous, or Chalk. It is impossible to say that Romer was a good practical geologist when in the field in an unexplored country; but as a paleontologist he was more successful, although he made conspicuous errors, and displayed a want of knowledge in ignoring the Primordial fauna of Texas, which he referred to the second fauna.

The figure 1—'Geological Horizons of Vertebrate Fossils' (SCIENCE, p. 806), is rather incomplete in some important points; for instance, the Cretaceous beginning with the 'Dakota group,' which truly is only the lower division of the Upper Cretaceous, or true Chalk,